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## NOTICE OF ALLOWANCE AND FEE(S) DUE

23696 7590 01/10/2011

QUALCOMM INCORPORATED  
5775 MOREHOUSE DR.  
SAN DIEGO, CA 92121

EXAMINER

PHU, SANH D

ART UNIT

PAPER NUMBER

2618

DATE MAILED: 01/10/2011

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,078

04/12/2005

Kenneth M. Gainey

080590

2571

TITLE OF INVENTION: WIRELESS LOCAL AREA NETWORK REPEATER WITH AUTOMATIC GAIN CONTROL FOR EXTENDING NETWORK COVERAGE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	04/11/2011

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

#### I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

23696 7590 01/10/2011

**QUALCOMM INCORPORATED**  
5775 MOREHOUSE DR.  
SAN DIEGO, CA 92121

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/531,078 04/12/2005 Kenneth M. Gainey 080590 2571

TITLE OF INVENTION: WIRELESS LOCAL AREA NETWORK REPEATER WITH AUTOMATIC GAIN CONTROL FOR EXTENDING NETWORK COVERAGE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 04/11/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
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PHU, SANH D 2618 455-015000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_
- 3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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10/531,078	04/12/2005	Kenneth M. Gainey	080590	2571
23696	7590	01/10/2011	EXAMINER	
PHU, SANH D				
QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			ART UNIT	PAPER NUMBER
			2618	
DATE MAILED: 01/10/2011				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 177 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 177 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/531,078	GAINEY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	SANH D. PHU	2618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed on 12/7/2010.
2. ☒ The allowed claim(s) is/are 1-49 and 51.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| <p>1. <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br/>Paper No./Mail Date <u>12/7/10</u></p> <p>4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material</p> | <p>5. <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6. <input type="checkbox"/> Interview Summary (PTO-413),<br/>Paper No./Mail Date ____.</p> <p>7. <input type="checkbox"/> Examiner's Amendment/Comment</p> <p>8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance</p> <p>9. <input type="checkbox"/> Other ____.</p> |
|--|---|

1. This Office Action is responsive to the Amendment filed on 12/7/2010.

### **REASONS FOR ALLOWANCE**

2. Claims 1-49,51 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Claims 1-49,51 are allowable over the prior art of record for the reason as stated in the Applicant's Remark dated on 12/7/2010 pages 12 and the reasons as below:

Regarding to claim 1, none of the prior art of record teaches or suggests a frequency translating repeater comprising: a detector circuit configured to detect if a signal is present on one of two frequency channels associated with the frequency translating repeater; a frequency translator configured to change a frequency channel associated with the signal from the one of the two frequency channels to an other of the two frequency channels; a gain control circuit configured to adjust a gain of the signal; and a delay circuit configured to add a delay to the signal to compensate for a signal detection interval and a transmitter configuration interval.. It would not have been obvious for a person skilled in the art to combine other prior arts of record in order to arrive at the claimed invention.

Regarding to claim 11, none of the prior art of record teaches or suggests a frequency translating repeater comprising: a detector circuit configured to detect if a signal is present on one of two frequency channels associated with the frequency translating repeater and to detect a received detected signal power of the signal; a frequency translator configured to change a frequency channel associated with the

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signal from the one of the two frequency channels to an other of the two frequency channels; a delay circuit configured to add a delay to the signal to compensate for a signal detection interval and a transmitter configuration interval; and a gain control circuit configured to adjust a gain value of the signal at least in part based on the received detected signal power detected by the detector circuit. It would not have been obvious for a person skilled in the art to combine other prior arts of record in order to arrive at the claimed invention.

Regarding to claim 15, none of the prior art of record teaches or suggests a frequency translating repeater comprising: a detector circuit configured to detect if a signal is present on one of two frequency channels associated with the frequency translating repeater; a frequency converter configured to convert the signal from a radio frequency (RF) signal to an intermediate frequency (IF) signal; a frequency translator configured to change a frequency channel associated with the IF signal from the one of the two frequency channels to an other of the two frequency channels; a delay circuit configured to add a delay to the IF signal to compensate for a signal detection interval and a transmitter configuration interval; and a gain control circuit configured to adjust a gain value of the IF signal. It would not have been obvious for a person skilled in the art to combine other prior arts of record in order to arrive at the claimed invention.

Regarding to claim 22, none of the prior art of record teaches or suggests a method for frequency translation in a frequency translating repeater, the method comprising: detecting if a signal is present on one of two frequency channels associated with the frequency translating repeater; changing a frequency channel associated with

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the signal from the one of the two frequency channels to an other of the two frequency channels; and adding a delay to the signal to equivalent to a signal detection interval and a transmitter configuration interval. It would not have been obvious for a person skilled in the art to combine other prior arts of record in order to arrive at the claimed invention.

Regarding to claim 30, none of the prior art of record teaches or suggests a method for frequency translation in a frequency translating repeater, the method comprising: detecting if a signal is present on one of two frequency channels associated with the frequency translating repeater; changing a frequency channel associated with the signal from the one of the two frequency channels to an other of the two frequency channels; adding a delay to the signal to compensate for a signal detection interval and a transmitter configuration interval; and adjusting a gain value of the signal in part based on a detected receive power level of the signal. It would not have been obvious for a person skilled in the art to combine other prior arts of record in order to arrive at the claimed invention.

Regarding to claim 34, none of the prior art of record teaches or suggests a method for frequency translation in a frequency translating repeater, the method comprising: detecting if a signal is present on one of two frequency channels associated with the frequency translating repeater and, if so, a receive power level of the signal; converting the signal from a radio frequency (RF) signal to an intermediate frequency (IF) signal; changing a frequency channel associated with the IF signal from the one of the two frequency channels to an other of the two frequency channels; adding a delay to

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the IF signal to compensate for a signal detection interval and a transmitter configuration interval; and adjusting a gain value of the IF signal based at least in part on the detected receive power level of the signal. It would not have been obvious for a person skilled in the art to combine other prior arts of record in order to arrive at the claimed invention.

Regarding to claim 39, none of the prior art of record teaches or suggests a frequency translating repeater comprising: at least two receivers capable of receiving transmissions on at least first and second frequency channels; at least one transmitter capable of transmitting on the first frequency channel; at least one transmitter capable of transmitting on the second frequency channel; a detector circuit configured to detect if a signal is present on one of two frequency channels associated with the frequency translating repeater and for detecting a receive power level of the signal; a frequency translator configured to change a frequency channel associated with the signal from an initial one of the first and second frequency channels to a subsequent one of the first and second frequency channels; a gain control circuit: for adjusting a gain of the signal; a delay circuit configured to add a delay to the signal to compensate for a signal detection interval, a gain adjustment interval and a transmitter configuration interval; and a microprocessor capable of configuring the first and second frequency channels based on pre-determined parameters stored therein, wherein configuration of a specific frequency for the first frequency channel or the second frequency channel or both is based on the pre-determined parameters, and the pre-determined parameters include at least one parameter selected, from the group consisting of: regulatory transmitter



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power limitations, regulatory out-of-band emissions limitations, and frequency separation between the first and second, frequency channels. It would not have been obvious for a person skilled in the art to combine other prior arts of record in order to arrive at the claimed invention.

Regarding to claim 42, none of the prior art of record teaches or suggests a frequency translating repeater comprising: means for detecting if a signal is present on one of two frequency channels associated with the frequency translating repeater; means for changing a frequency channel associated with the signal from the one of the two frequency channels to an other of the two frequency channels; and means for adding a delay to the signal to equivalent to a signal detection interval and a transmitter configuration interval. It would not have been obvious for a person skilled in the art to combine other prior arts of record in order to arrive at the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanh D. Phu whose telephone number is (571)272-7857. The examiner can normally be reached on M-Fr from 8:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sanh D Phu/  
Primary Examiner  
Art Unit 2618